

ALIEN TANKNOLOGY

*a home video game concept by
Noah Falstein*

Lucasfilm Ltd. Computer Games Project
February 25, 1985

ABSTRACT

This document describes *ALIEN TANKNOLOGY*, an original game concept for a strategy game in an action format. The graphics and game design will be impressive, taking fractals a step farther and introducing a new mix of careful thought and arcade action. It will set a consistent tone, and use a straightforward user interface, using the joystick almost exclusively. Finally, it will seem to be different games to different people, appealing to the fast-action shooters as well as the Infocom style strategists.

Document notation

Please note that text surrounded by brackets [like this text] will denote design changes that we hope to implement AFTER June CES, and are not necessarily parts of the final game.

Design premise

Fractal mountains are still novel and impressive in video games. Their most interesting qualities as implemented by Loren are that they show more detail the closer you get, and they can be regenerated from any angle with a minimum of storage. Rescue helped emphasize the first point, and *ALIEN TANKNOLOGY* will emphasize the second. By putting the player down among the mountains and providing a mission that forces navigation from one place to another on the ground, the reproducible and recognizable nature of the mountains will become critical to game play.

The second major premise is needed to keep the game original and advance the state of the art in a different direction. The game design is unique and will provide a new feeling to the game. It will not fit into earlier categories of game, combining multi-level strategy with a first person action structure.

Game Background

The game takes place in the distant future. Earth has developed space travel, and discovered that the Galaxy is united in a loose federation of many different alien races. Earth is offered membership, but the Federation provides little outside help for our fledgling race.

One of the Federation's newest member species, the Vindrem-Nam, argued strongly against our inclusion into the Federation. The Vindrem-Nam resemble seven foot tall cockroaches, and are offended by our treatment of their smaller earthly brethren, although they reluctantly concede the Earth roaches are not intelligent - yet. Outvoted by the members of the supreme council, the Vindrem-Nam are nevertheless determined to make our participation in the Federation as difficult as possible.

Largely due to the Vindrem-Nam, our requests for Federation technological aid have been rejected. Vindrem-Nam ships have been harrasing our merchant vessels, and our two star colonies. The only avenue available to us for gaining new weapons technology is scavenger duty

on the war planet, M'giddo. This planet is used by the federation as a sterile and safe place to settle disputes between its members. Carefully monitored battles are fought on the restricted battlegrounds that cover the planet like a grid. Alien tanks battle each other here, avoiding the cost and loss of life of a full scale war. Traditionally, the newest member of the Federation has performed clean-up duty on the hulks remaining after a battle. This task allows the new races to learn to use Federation technology at minimal cost to the Federation. The roaches (our name for the Vindrem-Nam) will share this duty with us for now - but on M'giddo, unlike the rest of the federation, outright battle is allowed. The only weapons permitted are those used by the disputing Federation races, but while cleaning up the hulks on the battlefield, useful weapons are often found, and the Roaches will certainly use them.

Basic game play involves going forth from your base to find the alien tanks. You remove any useful technology from them, detonate the hulk, and bring the new technologies back to base. But the Vindrem-Nam are out there too - and they won't be easy opponents.

Game Structure

The structure is fairly standard, to keep down the number of innovations the player will have to get used to. You have at your disposal a few Federation "telesuits", used by the Federation for bomb disposal. When hit by sufficient energy flux to destroy them, these suits will teleport their user to a safe location miles away - in this case your base. [It may be interesting to make the telesuits manually operated instead - the player has to hit the space bar to teleport back. In this case the player would be torn between staying in the tank trying to save it until the very last minute, and "getting while the getting is good". The first implementation will be automatic as just mentioned.] When these suits are used up you will have to go out in a normal suit - and your next error will be your last. Your command will award extra suits as acknowledgement of superior performance (Lots of points = extra lives). This provides a rational explanation for multiple lives without the "multiple lives" paradox associated with other methods. Also, any technologies collected but not brought back to base when the tank is destroyed will be lost.

The game is organized into a series of rounds. Each round consists of driving your tank out from your base onto the battlefield, finding abandoned tanks, removing useful systems from them, and returning to base. In order to remove a system you need only drive up next to the tank and stop. A robot probe will go out and pick up whatever seems most useful, and destroy the tank as it leaves. [Occasionally, it will not be an abandoned tank, but a trap set by the Roaches to ambush a robot, and the player will have to return to base for a new one.] You may choose to incorporate the system into your tank immediately, or simply carry it back to base without trying it out. You will be given some information about what it does - power generator, weapon, anti-detection gear - but to find out exactly how good it is you will have to try it or let your base technicians try to figure it out.

The Vindrem-Nam will be in competition with you for the abandoned tanks. They will not shoot at you when you are removing a system from the tanks they also need. Once you have the system though, they will try to stop you. Also, the longer you take to get back, the longer the enemy has to prepare ambushes, and position their own troops.

As you bring back the Federation tanks your technicians will feverishly work to decipher the mechanisms as you rest between rounds. Each new round represents another day, and as you find Federation secrets they will be incorporated into your vehicle for the trip to bring back other machines. If you successfully use the features they will always be incorporated. If you brought the tank back without figuring out its armaments, or towed it back with your own vehicle, there is a chance the techs will be able to decipher the circuits themselves. They will give you the option of incorporating what is found into your standard vehicle.

The rounds are further organized into groups. Each battle ground has five to ten tanks. You choose which to scavenge first, and then decide whether to return to base or try to collect more. Each trip you make to the tanks you will have to fight off your Roach equivalent who is also trying to steal tanks. If you successfully finish him off you will bring back a tank that round

and he will not. The reverse will mean you have lost a telesuit, or if you have none left, your life. It is also possible to avoid combat, in which case you each may take a tank, to meet the next time with different improved capabilities. The capabilities of the Roaches will increase gradually with time, and any tanks they get to first will add that particular technology to their tanks.

Once you and the roaches have cleaned out a "level" of tanks, your base (and theirs) will be moved to a new battlefield on the planet where fresh disabled vehicles may be found. The bases will be shielded and impossible to see from the enemy view (although you can see your own base's shield). [At the very high levels, the roach base will appear, and be a possible target for destruction, and subsequently the end of the game with the player as an "absolute winner"]

This structure allows lots of freedom and flexibility in game play. The tanks encountered will be the same each time, in the same places, to minimize confusion and allow pattern players to find the "best" way to do it, but players can choose which tanks to steal, which to destroy, which to leave until later, and which to just ignore. It will be possible for a skilled player to see a friend play to the same level with totally different choices of stolen tanks and strategy against the Roaches, let alone tactics and skill at control manipulation.

Screen Layout

The basic game screen will have four sections: An instrument readout at the top, with the basic tank systems (see below) depicted as if on small CRTs. The next section is the fractal window, showing distance- shaded fractals, with alien tanks and some enemies depicted as silhouettes and other enemies (roaches) as players. Your cursor and shots fired will also be player/missiles. The bottom two sections are control panel sections, with an icon and a character description of the system controlled by the section. Alien systems not yet tried or understood will have alien (and therefore incomprehensible) characters and icons. The three panels in a section will each have the name of their system flash 1/3 of the time, either from black to white or from black to the color of the system, if it has one. For example, you might have a red laser, a drive supercharger, and a green shield. The panels would read LASER DRIVE SHIELD. Two would be in black letters at any one time and the third would be lit in red, white, or green respectively. The icons would be character mode, and if the system was in use their background would switch from black (off) to white (on).

The fractal landscape outside the window will be designed by hand for the standard game. [Advanced players can choose random landscapes. Colored beacons will be located on the tops of hills to give the player landmarks to follow to and from the base. At higher levels the roaches will start destroying these beacons, making navigation difficult unless you have discovered powerful detection/location gear.] The standard human tank will also have a special direction finder that will point straight to your destination, but as you will have to drive through a maze of mountains, the straight route will not be the fastest. [By changing the fractal map on the fly in the areas far away from the player (and out of sight) a world of any size can be generated.] Your base will move after each group of tanks has been cleared out. You will have to find the best route for each new group, but the planet and landscape will be the same for each game, allowing learning over time.

Controls

The heart of this game is how it challenges the player to learn to use the controls to achieve the desired goals. In essence, this is the basis of ALL video games. This game is unique in that the major task that players must excel in to advance levels is learning new controls, not just improving their skill in manipulation of the controls they start with. The challenge is to provide these constantly changing controls in a very conservative and systematic way, so as to give players the joy of discovery that "That green whoozis controls a laser" without "How the @*#&(\$ do I get this thing to move?"

The most obvious danger of not being a fun game is in frustration level. Having to learn to use new controls over the course of a game could cause players to give up because the skills they have developed in the course of the game so far are now useless. The game is structured with

three types of players in mind, so that each type sees the game differently. The first level of player who is only interested in a simple shoot-em-up will treat the alien tanks as prizes, collect their technology for points, decline modifications to the standard vehicle, and progress as far as possible with the standard setup and controls. The second level, hopefully the majority, will play the standard game but see the alien tanks as treasure troves that can confer the capability to play for longer, getting higher scores and accomplishing the goals of the game more easily (killing roaches, getting more tanks). The third level is that of the expert player, who will start with second-level play, but will graduate to hunting for more and better alien gadgets as the shoot-em-up grows stale, providing "new" games for those players that are driven to look for them. [A final payoff and incentive to these players is the possible destruction of the Roach base with some special combination of advanced weapons and instruments.]

The process of learning what controls do has been simplified with the joystick interface. Nearly all interaction is through the joystick. A cursor appears on the screen, and is moved about with the stick. In the main view area the cursor is a targeting cursor, and the button causes your selected weapon to fire. Moving the cursor to the bottom sections will cause it to skip directly to one of the six panel sections, allowing nearly instantaneous selection. Pressing the button when the cursor is over a system will toggle it on or off, and its icon will "light up" as described above. Moving the joystick forward will cause the cursor to reappear in the view screen.

Moving the cursor to the top of the screen will select the drive control. The cursor will highlight the drive indicator there, and moving the stick will turn the drive on - forward or reverse, and/or right or left turn. Pressing the button will return the cursor to the top of the view area.

[In later development an energy management section can be added to the top controls, making it possible to allocate the power generated differently from the original setup. A special damage indicator/control screen could also be displayed at the top, having a keyboard option switch from the standard display to a damage control display. In this case the "mini-crt" format would stay the same, but the contents of the CRTs would be different.]

Finally, progression in from round to round is structured in a non-frustrating way. If on round two you find a tank system that you cannot benefit from, there is no need to figure it out to progress. You can take another instead, and leave it for the Roaches, or just try to destroy it.

Power system

Your tank has a specific power system, that produces energy in a generator, and channels it through the various systems in a specific manner. The generator produces a certain amount of power each update. If the drive is on, part of that power goes to moving the tank. If the radar is on, part of the power goes to that. The same applies to the ECM (electronic counter-measures, or "anti-radar"). Part of the remaining power is subtracted to recharge the shields if needed, and the rest goes to recharge the power reserve, a sort of battery for the weapon systems. If the power reserve is fully charged, all surplus goes to recharging the shields. If they are fully charged, the extra power is lost.

[An additional item can be added to the power system - fuel. This would be consumed as the generator produced power, and would be part of the energy management system that could be added after CES.]

Weapons draw on the power reserve. The weapon currently selected will have an arrow shown on the power reserve screen corresponding to the amount of energy that will be used if fired. This is called the power usage of the weapon. Each time it is fired, the power reserve will dip. If there is not enough power in the reserve for a full power shot, the weapon will not fire.

All systems have two basic qualities, power usage and efficiency. Some systems have a third quality, color. Power usage measures how much power or energy (I'm using the terms interchangeably, although I really mean power) a system uses each update to function. The power usage of the generator has no meaning [except in the extended energy management system, in which case it measures fuel usage]. The efficiency of a system generally means how well a system

uses the power it gets - how much work per power unit. Specifically, the power usage of the power reserve is actually a measure of how much power it takes from the flow (where the more it takes, the less power that goes directly to recharging shields), and the efficiency is actually the size of the reserve - how much it holds. The shields also have slightly different interpretations for power usage and efficiency, respectively how fast they recharge, and how well they stand up to punishment.

Alien Technologies

Weapons

Weapons will be aimed with a fast-moving cursor controlled by the joystick, and fired with the button on the joystick. Cursor movement and weapon firing will be updated at vertical blank, allowing a very fast game. [The cursor speed and acceleration capabilities, or "target acquisition variables" will have corresponding alien technologies that enhance them.] The basic weapon will be the chromatic electrodynamic cannon - the Cel Cannon. MECs come in different colors - red, orange, yellow, green, blue, and violet, and the low-power multichromatic white. The cannon bore will be seen at the top of your view window, and will track the cursor side to side, and foreshorten as the cursor moves up. The Cel cannon blast will move straight down on the screen with appropriate narrowing to simulate 3D. These colors are indicative of the frequency of radiation the cannon is tuned to (or so we will say in the manual). Your basic weapon that you start with is a white Cel cannon, with weak efficiency in all colors, but roughly equal effectiveness. [Other weapons could include cannon, missiles, guided missiles, high trajectory cannon (mortars)].

Weapons will have differing power usage and efficiency as well. The model for weapon damage is (power use x efficiency x ((Cel color - shield color))). Weapons with higher power use use more power, but cause more damage with hits. The higher the efficiency, the more damage. The greater the difference in Cel color vs. Shield color the more damage - maximum damage is red Cel Cannon vs. Violet Shield, or vice versa. Shields reflect energies in the frequency they are tuned to. [Other weapon variables that can be changed by finding alien technology include how close you have to aim to score a hit, automatic aiming (a very powerful find), and some humorous but ineffective weapons (squirt guns, paint guns, noise but no shot, etc).]

Shields

Shields are also on a chromatic system. As noted above, shields should be chosen to closely match the color of the weaponry they must defend against. Shields are not totally monochromatic though. They will have some response in all colors, and the "color" of the shield is only the color the shield is strongest in. Power usage in shields determines how much damage can be repaired with a given flow of power. Efficiency is how much the shields will drop with a given damage. Shields also differ in their spectrum profiles - a very strong red shield might have more "thickness" or capacity to absorb damage in say, green than a weak green shield would. This is designate in the luminosity of the shield icon and lettering, and in the graphic representation of the shield at the top of the screen.

Radar and ECM

Radar, or more correctly "detection gear" comes in a multitude of forms. Most radar is displayed with pointers of one sort or another. Your standard radar points to the nearest alien hulk within a moderate range. More advanced radars will have better ranges (efficiencies) or lower power usage. Your radar's efficiency/power use product also determines how early you can see enemies. The Roaches' ECM (a sort of anti-radar) also affects this factor, so a high Roach ECM rating can make them harder to see - more likely to get close before they show up in your viewscreen. Similarly, your ECM subtracts from their ability to see and shoot at you. If your radar minus their ECM is stronger than their radar minus your ECM, you will see them before they see you.

The pointer on your radar screen will also be affected by alien technologies. Useful pointers include toward nearest Roach, towards base, and (from a less brave race) away from nearest enemy. Of course these will be difficult to assess without trying. [Advanced radars will point at nearest danger - automatic cannon or roach, or at the roach base. Less useful ones will point at random (disorganized race), at the nearest hulk of the same race as the one the radar is taken from, at the nearest hulk of the race that is the deadly enemy of the one that made the radar, at the tallest mountain (for a birdlike alien - nesting instinct), etc.]

Other technologies

There are other miscellaneous technologies that could be changed. Most notably better power generators could be found. Also dampers and superchargers - devices that are associated with a particular system and change its energy characteristics. Superchargers boost the energy use and therefore output of ship systems, but on lower levels will be inefficient, increasing use by 100% but output by only 50%. Dampers have the opposite effect, and are directed against any enemies in range. [Devices that change the fractal landscape, that play alien music, that wipe your windows (a Felix Unger race), or anything else we can think of for color.]

Base Interior

Once you have collected some systems and returned to base (or been destroyed and teleported back) you will have a menu-driven screen. At base, you can switch systems, drop systems off for points and to have them analyzed for function, and view the library archives on alien races and technologies. The library archives are a sort of animated book about all the races known to us, and some facts about them. It will be stored on disk in the actual program, with each race brought in as specifically inquired about. You will be able to view the races that built each system you bring in, if the library has them on file. Using the information here and in the supplemental book provided in your game instructions, you should be able to draw inferences about what the systems are likely to do, and how useful they are. Close attention to alien system icons and characters will give clues as to what race made the system, if you don't recognize the tank silhouette or have forgotten it.

Alien races will have brief biographies and entries on technology level, friendly races, enemy races, personal habits, quirks, etc. We can fill any leftover space on the disk with them.

[The base will have repair facilities for damaged systems and repair alien systems with varying efficiencies depending on how many pieces of this race's technology have been brought in and analyzed. The base will also have a sophisticated energy management analysis unit, that will go over your weapons and systems available and suggest which ones will give maximum efficiency for all systems used.]

Enemies

Your chief enemies are the Roaches, the dreaded Vindrem-Nam. They will have foot soldiers and tanks in the field shooting at you. The foot soldiers will be easy to kill, but will keep coming, using fairly low power weapons. The tanks will have roughly equivalent weaponry to you. They will increase in number and ferocity and effectiveness with time, partly in proportion to time, partly as you fail to pick up alien systems and they fall into Roach hands (er... claws?). The tanks will be drawn with players, colored according to their shield type, and with weapons that will also be colored. A large part of the strategy will be selecting the proper weapons to defeat the Vindrem-Nam's current technology, both in your choice at the base and in your dynamic choice of weapon and shield as you move. You won't have to change often until you reach very high levels.

Scattered about the area are other hazards as well. Some of the hulks are booby traps, and will shoot at you (use your nearest enemy radar to anticipate this) or turn out to be animals that eat your robot when you try to take their technology. These will be documented in your guides, but should take a few people by surprise. Also, automatic cannon will occasionally pop up and start shooting, left over from the battle that happened here before you arrived.

Scoring

Points are scored (in rough order of importance) for [destroying roach base] turning powerful systems over to your command (and losing their use in the game), destroying roach tanks, using new alien systems, returning safely to base after finding a system, destroying roaches, destroying automatic cannon. Every X thousand points you will be awarded a new telesuit, as reward for your skill. There will be a final ranking at the end as well, based on your performance over time as well as your score.

Messages

Messages will be scrolled into the message area below your top screen. They will convey useful information and add color to the game. Sample messages include: All hulks cleared, return to base. Intelligence reports Roaches have green cannon. Roach radar damper in effect. Roach generator supercharger emission detected. "Eat photons, soft-shelled Earther!" "Your mother has a bent ovipositor."

The taunts above will be interrupted with the destruction of a roach footsoldier or tank, and the characters replaced in mid-taunt by AAARGH!!! This might be a good application for speech...

Final Battle

[Within the game's stated goal of getting as many points as possible, an undocumented "bonus task" will be built into the game. The Roaches' base is located roughly opposite yours on the battlefield. In the lower levels of the game it will be suicidal to approach - heavily defended by cannon mounted on hilltops, and tanks in the valleys. It will however be possible to destroy given skilled enough play at high levels of the game. The "window of opportunity" will open and close depending on what offensive and defensive weapons each side finds during the course of the game, and the best players will discover that by destroying the enemy base they can end the game in victory, rather than just playing until defeated as usual. This will give a large bonus, perhaps doubling the final score.] At the end of every game the Human Forces Command will give you a rating and possible promotion - [the highest promotion will only be possible with destruction of the enemy base, regardless of final score. These levels of promotion will be documented, and the top one will be one of the hints at an undocumented task the player can excell at.]